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work which requires drying, or for any other purpose of this kind.

The supply of this stove with fuel from shavings is attended with so little trouble, and is such an advantage to the workmen, that they will always prefer burning the shavings to coals; so much so, that where ten men are at work there is a difficulty to collect shavings sufficient even to light the fire the next morning.

By this means the danger of fire, which has been fatal to so many manufactories, is greatly removed; the loose shavings being consumed as soon as they are made, and that in lieu of more expensive fuel; and so slow are the shavings consumed, that the iron cylinder will hold enough, when crammed full, to supply the fire for upwards of half an hour. To guard the workshops still more effectually from danger, the stove and its iron flue is supported upon a mass of brick-work, which prevents any sparks, &c. from falling upon the floor; and the sides of the brick-work afford very convenient shelves on which to lay any wood-work that requires heating, drying, &c. and when a greater heat is required to extend to a considerable length horizontally, as, for instance, four or five feet, by merely putting a few shavings into the cylinder frequently, in place of filling it, they become converted into flame, which is carried the whole length of the iron flue, heating it uniformly throughout. No soot lodges in the flue, but merely light ashes, which can be easily cleared out from time to time, as may be necessary.

*On the means of bringing Fruit-Trees into a bearing State, on preserving Fruit, and the proper Construction of Fruit-Rooms. By Mr. Robert Ingram,\* Torry.*

[From the Transactions of the Caledonian Horticultural Society.]

As the methods proposed for bringing pears into early bearing, are various, I beg leave to offer, for the consideration of the

\* Mr. Ingram having at different times produced most satisfactory proofs of the efficacy of his method of keeping fruit, by exhibiting the finest pears ever seen by any member of the society, at a period of the year (7th February,) when the same kinds of pears, preserved in the ordinary way,

society, some which I have adopted, and all of which I have found to be more or less effectual.

In the first place, pear trees that grow strong and luxuriant, and which may not bear from these circumstances, I have found to be rendered fruitful by cutting their roots in the spring, when they begin to push; but this must be done with care. They must be dug round, about two feet from the stem of the tree, and got fairly under, so as to cut the leading roots; if this is done, it will in most cases bring them into bearing.

In the second place, I have found pear trees brought to bear by transplanting; and when this is to be adopted, I would recommend, that the trees should be dug all round, and all the leading roots cut, one year before lifting, and care should be taken that the roots be cut clean, and not split; for when split they are long in healing over, and do not throw off fibres so freely. When trees are to remain one year after cutting their roots, I would recommend, that the space that is dug round each tree, should be filled up with fine earth; when this is done, it will encourage the tree to make young roots, which will be found of great service to the tree when transplanted. The transplanting, I think, should take place about the end of November.

In the third place, I would recommend budding or grafting, if the trees stand in proper situations. French pears are in general the most shy to bear; and I have found that budding has brought them into bearing, and has answered better than the two former plans. I have been enabled to bring most of the kinds into bearing from three years budding, and have had from most of them a full crop, having from a dozen to a dozen and a half on each branch so budded, and the fruit much large-

would have been completely destroyed; the society resolved to bestow upon him some mark of their approbation, for his successful skill in this particular. They accordingly agreed, (10th March, 1812,) that a piece of plate, with a suitable inscription, should be presented to him. They at the same time directed the Secretary to give him thanks in the name of the society, for the offer which he has made of communicating to them the result of future experiments on this subject.

er and finer than on those whose roots were cut, or those that were transplanted; because on trees that are transplanted, when they begin to bear, the fruit is often for years quite small, and without the proper flavour. This will be found to be the case, particularly when trees are old before being transplanted. This naturally arises from the check the tree has got. The trees that I have budded over again, were from eighteen to twenty years old. They soon filled the wall, some of the buds making above four feet the first season. The kinds that were budded again, were the Crasanne, Beurrés, Bergamots, St. Germain, Chaumontelle, and Swan-egg, all of which have borne well.

It may not be improper here to take notice of a fact that has occurred this season with regard to budding. I have a young tree of the Gansel Bergamot, about twelve years old; three years ago I put a few buds on a Swan-egg pear from this tree, and this season I had the pleasure of having five clusters of flower-buds, but they were all destroyed with the frost in the spring, except one pear, which came to be a handsome fruit. The mother tree has not shewn any flower-buds yet, which clearly proves, that budding will bring trees sooner into bearing; and I am convinced it not only does so, but that working over again much improves the quality of the fruit.

When trees are very old, though in good health, buds from such old trees are sometimes very ill to take, or even to graft upon; these I would recommend to be cut in, and to bud or graft upon the young wood which the tree makes from being so treated. The budding or grafting may be done on the present year's growth; this I have found to answer very well, the trees pushing and making strong wood afterwards, and producing fine fruit.

It may be proper here to remark, that a number of trees, both pears and apples, are much hurt in their bearing from the mode of pruning. In the first place, it is a common practice to cut off all the young shoots of the present year's growth, leaving two or three eyes; this I consider as an effectual way to encourage useless growth, and particularly at the stem of the tree, which often more resembles a *willow-stool* than any thing else. This is a strong reason why there is no fruit near the stem of the tree, for it is not from that wood that the flower-buds come. All this wood should be cut close off in the spring, (if it

has not been so cut in the summer pruning,) and if so done, a great deal of useless growth will be prevented, and the strength of the tree saved for better purposes. In the first place, it will greatly enlarge the size of the fruit, and will also strengthen the fruit-buds for another year.

Some French pear-trees shew a great deal of flower-buds, and often produce little fruit, and for this reason, that they are weakened from over-flowering. The brown Beurré is one in particular that shews a great deal of flowers, and often produces little fruit. I had some trees of this kind that I got scarcely any fruit from, until I cut off almost the one-half of the buds, only leaving those that were strongest, and closest to the tree; from this management I have had good crops. Last year (1810,) I had upwards of twenty dozen from one tree, and this year there is a fair crop, as the season goes. This pear-tree is very liable to canker, particularly if allowed to have long spurs; and I would therefore recommend keeping the spurs very short. If this be done, it will greatly help to save the trees from canker.

I would also recommend keeping the spurs of all other pear-trees short, and only leaving those that are youngest; for when the spurs are allowed to grow strong, you seldom have any fruit from them. If the spurs are thus thinned out, it will greatly promote their bearing, and make the fruit much finer.

With regard to training on a wall, I would recommend the fan-way, in preference to the horizontal; for this reason, that pear-trees are much inclined to bear at the extremity of the branch, on the fine young wood; from training them fan-shaped, you have it in your power to fill up the tree occasionally in the centre with young wood; whereas, in the other case, you have it not in your power so readily to accomplish this.

Having thus made a few remarks upon bringing pear trees into bearing, it may not be improper to say a few words on the gathering of pears and apples, and of promoting their ripening, as many of the kinds of pears in this climate scarcely ripen, and I am convinced they might be artificially brought to maturity. 1. There is a practice too common of making a general sweep at once of the fruit off the trees; but this should not be done; they should be gone over carefully, and those only taken

off, that part from the tree freely. Those that are left will grow larger, and will ripen as well as the first gathered: the gathering of fruit, therefore, should be repeated as often as found necessary. 2. I consider that a great deal of the winter pears are too soon pulled, and the reason of it is: We have often some frost early in autumn, and when that happens, the fruit is gathered before it has got the full benefit which the tree can afford. But pears are not very soon hurt by frost; for I have tried the experiment, and allowed them to remain, although there was a little frost in the night, and they have suffered no harm from that; but, on the contrary, I found the fruit improved a great deal from remaining on the trees, perhaps fourteen days longer than they would have done, had they been gathered when frost came on early. Every one who has got fruit to gather, must judge when the tree ceases to nourish it; for when this is the case, it will part from the tree by being gently lifted up. The pears or apples when pulled, should be carefully laid one by one into the baskets, so as not to bruise one another.

There seems to be an universal desire to have fine kinds of fruit; but I am sorry to observe, that there is so little taste in the country for having good fruit-rooms, the most of them being very cold and damp. When fruit is put into such places, instead of ripening, it will grow quite tough, and in most cases musty tasted, and scarcely eatable. A fruit-room should therefore be perfectly dry, and free of all dampness; and those pears and apples which this climate barely ripens, should be kept warm and dry, in a temperature corresponding to that heat which ripens them in their native climate. This plan I have found to answer very well: it was in this mode that the pears were kept which were sent from Sir William Erskine's garden, and shewn to the society last December, (1810). The Chaumontelle pears were kept in from 60 to 70 degrees of heat, in close drawers, and some of the others from 50 to 60 degrees. This I knew by always keeping a thermometer along with them. I would recommend, that a fruit-room should be fitted up with drawers, of about six inches depth, by three feet in length, and two in breadth. As to the number of drawers, or the size of the house, it must depend on what fruit the proprietor has to fill it with. The drawers should be made of hard wood;

for I have known fir spoil the flavour of the fruit. The house should be made to admit plenty of free air when required, for this will be necessary for keeping the fruit in good condition; and the drawers in which the fruit is kept, will require to be drawn out occasionally, to admit fresh air, which will prevent the fruit from getting musty tasted. There should be a stove in the house, which should be used frequently, to keep up a proper temperature. It being of the greatest importance to have the table served as early with fruit, and also as late as possible; if the above plans be adopted, they will not only be the means of improving fruit, but will render it sooner fit for use. I have been able to bring Crasanne pears to the table about the middle of November, and have kept them until March; and Chaumontelle pears from the middle of December, until the end of April, (and the other kinds in proportion to their general keeping). Care must also be taken that they be not kept too warm, for if this be the case, they will shrivel in the skin, and not have the due flavour. It must be observed, that no more should be brought to ripen, than will serve until those that are kept colder come in their turn; and the quantity will depend on the consumption by the family. All pears that ripen freely on the tree, if wanted to be preserved for the table longer than they commonly keep, should not be allowed to stand until they are dead ripe, but should be gathered sooner. You will thus be able to keep them some weeks longer than you could have done otherwise. I have been able to keep French bergamot pears until Christmas, while others, gathered from the same tree, were fit for the table in the middle of October.

The soil in which the trees grow at Torry, is for the most part a strong black loam, with a bottom of sand and clay mixed. The soil is two feet deep, with flags under each tree, about a yard square. The manure given the borders is a compound of fine strong rich earth, from the cleaning of ponds or ditches, with dung and lime all mixed together, about two carts of dung to six carts of earth, and one cart of lime. This compound is turned over several times, and lies twelve months before it is used. Of this I have given the borders within these nine years, two complete dressings, about six inches deep all over, trenching it into the borders; and I have occasionally given them common surface-

lunging with the same. This sort of composition I prefer to common dung. The trees have improved both in health and bearing, and produce much finer fruit. The wall is fourteen feet high, and the borders the same breadth. The common cropping of the borders is sallads, and a few bulbous roots. I consider heavy cropping with vegetables very hurtful for the trees, and it should be avoided if possible.

Should any of these remarks be of service, or found to add any thing to the general stock of knowledge of the Caledonian Horticultural Society, I shall feel myself gratified. I am at present engaged with some experiments, to ascertain what length of time pears and apples may be preserved in full perfection, &c.; and should any of them be found effectual, I shall take the earliest opportunity of communicating them to the society.

*Account of a new Kind of Paint, applicable both to the Interior and Exterior of Habitations. By M. C. de la Vaux. In a letter to M. Belanger, Architect to his Royal Highness Monsieur.*

[From the Journal de Physique.]

The author, who is always endeavouring to render science useful to the arts, published some time ago a method of *painting with milk*; but the process was expensive: he has now invented another, which cost very little, and is the object of this letter.

"You desire, my dear friend, some particulars respecting my new-invented paint, which in your opinion is a miracle of art.

"It is, indeed, excellent and durable, I should say unchangeable, if I did not fear to alarm the painters; equally proper to be employed both for the exterior and interior; for the best apartments as well as for the commonest purposes of house-painting; for preserving dry and healthy, buildings appropriated to large collections of the human race, or for animals; contributing indeed to the preservation of the edifices: such a paint is truly a miracle of art, especially since, from its low price, it is certain to be generally used. This paint partakes of all the properties of my *improved milk-paint*, which will be adopted by the rich, without being much dearer than the paint in question. My work on these interesting objects would have been published last year, but for the troubled state of our country. Now, however, that the

storm is succeeded by a calm, under the shield of the Bourbons, the proprietor, returned to his patrimony, will be occupied in repairing the damage it has sustained, and which will be very considerable in the countries that have suffered by the war.

"Painting will be more especially indispensable, and it cannot be too much insisted upon in places where the wretched objects attacked by the *Typhus* have expired, and even where they have only dwelt for a time. It will also be necessary in stables and out-houses that have contained infected cattle.

"They ought to be previously lime-washed, in order to demephitise every part; the action of quick-lime being not less powerful than fire.

"This beneficial and cheap material ought to be recommended to all Europe; for there are few countries in it which have not been the seat of war. House painting, as the paint is now composed, is both expensive and inconvenient, and would probably be delayed for these reasons, but which will not be the case if these objections are removed.

"As the inquiry of an economical mind is to know, in the first place, the cost of a thing, I shall set out with stating the price, and inscribing it in capitals. THE PRICE OF THE SQUARE FATHOM IS ONE CENTIME OF A FRANC: The proportions and process are as follows:

Potatoes, . . . . .	one pound.
Spanish white, . . . . .	two pounds.
Water, . . . . .	four quarts.

"The potatoes are boiled in water or steam, (steam in the large way is the most economical and expeditious,) peeled, crushed, and while yet warm, tempered with two quarts of warm water. The mixture is then passed through a horse hair sieve, to free it from lumps and specks. When a large quantity is to be prepared at once, the mixture of potatoes and water must be put into a boiler for a quarter of an hour, in order to render the solution more complete, by a heat nearly approaching to ebullition.

"When in this state, the mixture is added to the Spanish white, previously mixed with two other quarts of water: but this proportion is not to be strictly kept, because a wood or wall, that has not been covered with preceding coats, absorbs more water, and requires a thinner paint.

"I will now give an instance in which